



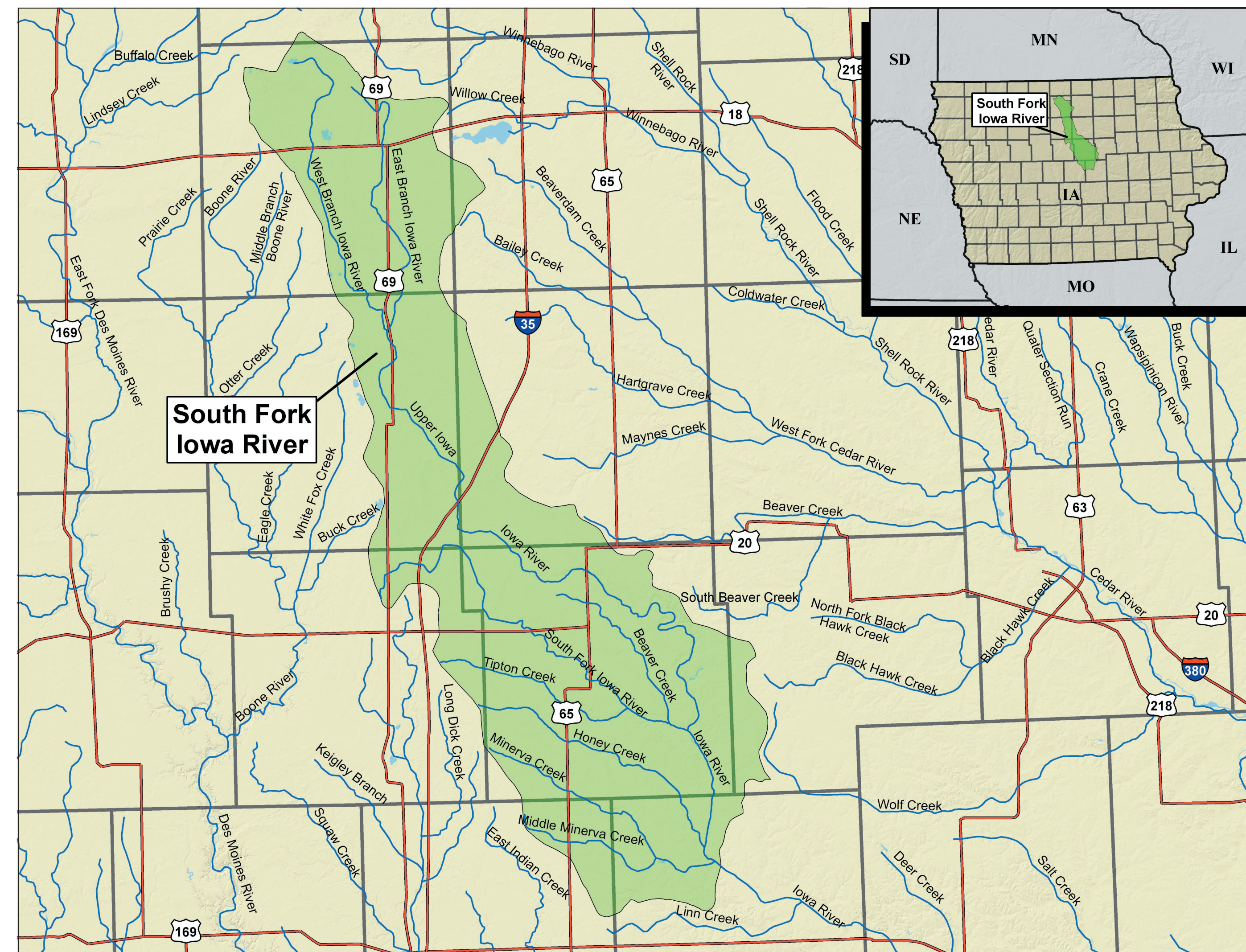
United States Department of Agriculture

Conservation Effects Assessment Project (CEAP)

South Fork Watershed, Iowa: 2004-2006



An ARS* Benchmark Research Watershed, one of 24 CEAP watershed projects.



Approach

Water sampling and monitoring: Nutrients, sediment, and pathogens

Watershed models: EPIC (Erosion Productivity-Impact Calculator), SWAT (Soil and Water Assessment Tool)

Assess practices: Conservation tillage, nutrient management, waste utilization, constructed wetlands, grass waterway, and subsurface drainage

Communicating Results

Mapping strategies to identify optimal locations to install conservation practices as an alternative to current placement strategies; an assessment of soil quality in the watershed; documentation of land use and water quality dynamics in the watershed.

Collaborators

- USDA, Natural Resources Conservation Service
- U.S. Geological Survey
- U.S. Environmental Protection Agency
- South Fork Watershed Alliance
- Iowa Geological Survey
- Iowa State University

Contacts

Thomas Moorman, USDA ARS
(moorman@nsl.gov)

Mark Tomer, Watershed Leader
(tomar@nsl.gov)

Hal Cosby, USDA NRCS
(hal.cosby@ia.usda.gov)

South Fork Watershed Alliance:
<http://www.southforkwatershed.org/default.asp>

NRCS State Conservationist
Rick Van Klaveren

CEAP Assessment

Study loads of sediment, nitrate, phosphorus, and *E. coli* leaving the watershed and the capacity of conservation practices to reduce those amounts. Identify locations where conservation practices should be most effective in reducing contaminant loads. Assess the impact of current tillage and cropping practices on soil quality.

Watershed Description

- 183,000 acres
- 85% crop land, 6% grass and pasture
- Approximately 100 confined swine-feeding operations.
- Watershed representative of tile-drained lands in the Midwest Corn Belt that are under intensive management for corn and soybean and livestock production.

Issues: Major water quality concerns are nitrate loads from subsurface drainage systems, phosphorus, and sediment in runoff, and pathogens in stream flow.

Soil quality concerns to be assessed are trends in carbon sequestration as practices are implemented, and phosphorus accumulation in soils receiving frequent manure applications.

*Agricultural Research Service



Ditch with tiles.



Constructed drainage ditch in north-central Iowa. Drainage districts were formed in the 1900's to build and maintain such major drainage ditches to allow better drainage of croplands.



Restored wetlands.

Timeline

2003 Initial funding	2004 August CEAP bibliographies	2005 May Wetlands peer review	July Wildlife literature review (program-based)	October Cropland literature review Wildlife literature review (practice-based) Wildlife Work Plan	November Wetlands Work Plan	December Draft findings—Prairie Pothole region 1st ARS Benchmark Watersheds progress report
2006 February Preliminary habitat quality models— Prairie Potholes wetland region	March Preliminary National Assessment Report	December 2nd ARS Benchmark Watersheds progress report	2007 Fall National Assessment Final Report	December 3rd ARS Benchmark Watersheds progress report	2008 December 4th ARS Benchmark Watersheds progress report	